5-106.6

690

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

FERNALD
LOG K-1424
APR 25 10 00 AM '97
5412

APR 24 1997

REPLY TO THE ATTENTION OF: SRF-5J

Mr. Johnny W. Reising
United States Department of Energy
Feed Materials Production Center
P.O. Box 398705
Cincinnati, Ohio 45239-8705

RE: Draft Final
IEMP

Dear Mr. Reising:

The United States Environmental Protection Agency (U.S. EPA) has completed its review of the United States Department of Energy's (U.S. DOE) draft final Integrated Environmental Monitoring Plan (IEMP). This document was submitted on March 6, 1997, per earlier agreement between all parties at a technical information exchange meeting.

The IEMP has been prepared to address all applicable, relevant and appropriate state, federal and U.S. DOE monitoring requirements, and to fulfill an Operable Unit 5 remedial design deliverable requirement.

Although the revised document has adequately addressed most of the major issues with respect to the IEMP and the documents objectives there are several issues which require clarification. Attached are U.S. EPA's additional comments on the IEMP.

There is one air monitoring issue that must be addressed before the IEMP can be approved. Radionuclide NESHAP Subpart H, 40 CFR 61.93(5)(vi), states the following regarding U.S. DOE's use of an alternative methodology to the typical stack sampling/modeling: "use of environmental measurements to demonstrate compliance with the standard is subject to prior EPA approval. Applications for approval shall include a detailed description of the sampling and analytical methodology and show how the above criteria (40 CFR 61.93 (5)) will be met."

An application for approval must be received before the IEMP can be approved. The application for approval can be a letter summarizing the sampling and analytical methodology and how the 40 CFR 61.93(5) criteria will be met with the IEMP as an attachment.

Therefore, U.S. EPA disapproves the IEMP pending incorporation of adequate responses to the attached comments. U.S. DOE must submit

Recycled/Recyclable-Printed with Vegetable Oil Based Inks on 100% Recycled Paper (40% Postconsumer)

(nickel (K) partial action response to doe-0658-97(104)

responses to comments and a revised document within thirty (30) day receipt of this letter.

please contact me at (312) 886-0992 if you have any questions regarding this matter.

Sincerely,

James A. Saric
Remedial Project Manager
Federal Facilities Section
SFD Remedial Response Branch #2

Enclosure

cc: Tom Schneider, OEPA-SWDO
Bill Murphie, U.S. DOE-HDQ
John Bradburne, FERMCO
Charles Little, FERMCO
Terry Hagen, FERMCO
Tom Walsh, FERMCO

ENCLOSURE

TECHNICAL REVIEW COMMENTS ON THE DRAFT FINAL INTEGRATED ENVIRONMENTAL MONITORING PLAN

GENERAL COMMENTS

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 3 Page #: NA Line #: NA
Original General Comment #: 4
DOE Response #: 9
Comment: The text states that DOE will base its decision to recalibrate the groundwater model on whether future groundwater elevation levels are within the historical minimum and maximum groundwater elevation measurements. This approach is acceptable if the future range in groundwater elevations falls within the minimum and maximum groundwater elevation range for the specific season under study.

DOE states that throughout the aquifer restoration period it will compare predicted total uranium concentrations from selected monitoring wells to predicted total uranium concentrations. This comparison will be used to verify the groundwater model. U.S. EPA agrees with this approach. DOE should also compare the concentration of total uranium from each of the extraction wells to the total uranium concentration in each extraction well predicted by the groundwater model. In addition, DOE should compare the mass of uranium extracted from each extraction well to the predicted uranium mass for each extraction well. These two additional comparisons are as important as a point-by-point comparison because the concentration and mass from each extraction well gives a better overall assessment of the aquifers response to the remediation modules. Furthermore, DOE has based many of the remediation decisions on the predicted total uranium concentration and total uranium mass extracted from each extraction well.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: NA Page #: NA Line #: NA
Original General Comment #: NA
DOE Response #: NA
Comment: DOE responses to several U.S. EPA comments refer to either an item of information, planning, or action that will be incorporated in a separate document. For example, DOE refers to information that will be provided in the Sitewide Excavation Plan in response to U.S. EPA Specific Comment No. 35. Another example is DOE's response to U.S. EPA Specific Comment No. 45 that indicates the IEMP submittal for the time period of 1999 to 2000 will include an extended

analytical suite for sediment. It is DOE's responsibility to properly address and incorporate responses to these comments in the separate documents. DOE should prepare a table summarizing the separate documents that will address the responses to U.S. EPA comments on the IEMP.

SPECIFIC COMMENTS

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 3.5.1.4 Page #: 3-45 Line #: 1
Original Specific Comment #: 16
DOE Response #: 22
Comment: DOE's response is acceptable; however, the text of the IEMP was not changed to reflect the response. DOE should modify the IEMP text to reflect these changes.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 3.5.1.4 Page #: 4-45 Line #: 3
Original Specific Comment #: 17
DOE Response #: 23
Comment: DOE's response is acceptable; however, the text of the IEMP was not changed to reflect the response. DOE should modify the IEMP text to reflect these changes.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 3.5.1.6 Page #: 3-49 Line #: 7
Original Specific Comment #: 19
DOE Response #: 25
Comment: The text states that DOE will not collect groundwater elevation data from Type 3 wells. DOE bases this decision on historical groundwater elevation data, which demonstrates that the groundwater elevation for Type 2 and Type 3 wells are very similar and do not indicate vertical gradients. DOE should collect groundwater elevation data from both Type 2 and 3 wells because historical data reflects the aquifer's response to minor stress as compared to the proposed groundwater remediation modules. DOE proposes aggressively remediating the aquifer with both pumping and injection wells. Groundwater elevation data from both Type 2 and 3 wells is needed to monitor aquifer restoration and system operations. DOE should revise the IEMP to include collecting groundwater elevation data from both Type 2 and 3 wells on at least a quarterly basis.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 4.4.2.1 Page #: 4-10 Line #: 36
Original Specific Comment #: NA

Comment: The text throughout Section 4 incorrectly refers to Appendix C for further information on surface water locations that exceed final remediation levels (FRL) and benchmark toxicity values (BTV). Surface water locations are shown in Appendix B. The text should be revised to refer to Appendix B for surface water locations showing exceedences of FRLs and BTVs.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 4.4.2.3 Page #: 4-17 Line #: 13 to 15
Original Specific Comment #: NA
Comment: The text refers to a table providing the number of FRL and BTV exceedences in Appendix C. Neither Appendix C, nor Appendix B, contain any table that lists such exceedences. The text should be revised to address this issue.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 4.4.2.8 Page #: 4-27 Line #: 17
Original Specific Comment #: NA
Comment: The text refers to a sampling agreement implemented on May 1, 1996. FEMP should cite a reference that discusses the sampling.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 4.4.3 Page #: 4-28 Line #: 31
Original Specific Comment #: NA
Comment: The text specifies analytical support level (ASL) B for all data collected in the IEMP surface water and treated effluent program. An explanation of ASL B should be provided to clarify the program design.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 4.4.3 Page #: 4-30 and 4-32 Line #: NA
Original Specific Comment #: NA
Comment: Table 4-3 incorrectly references Table 4-1 for parameters to be analyzed at locations SWP-01 and SWR-01. Table 4-3 should be revised to reference Table 4-2.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 4.5.2 Page #: 4-39 and 4-54 Line #: NA
Original Specific Comment #: NA
Comment: Tables 4-4 through 4-15 identify multiple analytical methods for several analytes, including total metals, fluoride, cyanide, ammonia, nitrate/nitrite, and total suspended solids. These tables should be revised to list the specific analytical method for each of these analytes. In addition, the tables should be revised to list the authors and year of publication for the references provided.

Commenting Organization: U.S. EPA Commentor: Saric

Section #: 5.4.3 Page #: 5-8 Line #: 28-31
Original Specific Comment #: NA
Comment: The text provides limited detail regarding the development and justification for the analytical parameters selected as part of the sediment program design. It is not clear why some parameters will not be analyzed. For example, DOE proposes not monitoring radium-226 and isotopic thorium concentrations in sediment from Paddy's Run south of the storm sewer outfall ditch and in the Great Miami River because these analytes have not been cosistently detected at levels above FRLs. The text does not clearly indicate if radium-226 and isotopic thorium have been detected at levels above background at these locations. Because radium-226 and isotopic thorium are primary contaminants at FEMP, detection of these analytes at levels above background would indicate that pathways exist for sediment contamination to exceed the FRLs. Also, the remedial activities to be conducted at FEMP may significantly increase the quanitity and variety of contaminated sediment. The text should be revised to address the issue of monitoring radium-226 and isotopic thorium in sediments from Paddy's Run south of the storm sewer and in the Great Miami River. In addition, DOE should more clearly define its technical justification for the proposed analytical parameters.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 6.4.2.2 Page #: 6-20 Line #: 10 to 21
Original Specific Comment #: NA
Comment: The text states that data from 8 of the 20 alpha scintillation radon detectors will be compiled into 24-hour averages and reported to EPA on a quarterly basis. This section and Figure 6-3 should be revised to identify the eight detectors that will be included in the quarterly reporting. The text should also briefly describe how the eight detectors were selected and whether the selection criteria are still be applicable for the full range of planned remediation activities at FEMP.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 6.5.2 Page #: 6-25 Line #: 17
Original Specific Comment #: NA
Comment: The text states that a quarterly composite sample of high-volume filter media will be analyzed for radionuclides at ASL D. However, Table 6-2 on Page 6-18 specifies ASL B for these samples. This discrepancy should be corrected by listing the appropriate ASL in both locations.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 6.5.2.2 Page #: 6-27 Line #: 11 to 24
Original Specific Comment #: NA

Comment: This section describes quality assurance (QA) requirements for air particulate samples. However, the section does not adequately describe QA requirements for the quarterly composite samples that will be analyzed for target radionuclides. For example, the section does not indicate whether blank or spiked filter samples will be submitted with the quarterly samples as is being done for the bi-weekly samples that are analyzed for uranium. The section should be revised to identify and describe all QA requirements for quarterly radionuclide samples.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 6.5.3.2 Page #: 6-30 Line #: NA
Original Specific Comment #: NA
Comment: Section 6.4.2.2 states that two or three detectors will be used at each alpha track-etch monitoring location, and that the results of these multiple samples will be used to assess the precision of the monitoring data and to identify any spurious results. Section 6.5.3.2 should be expanded to further describe the QA requirements associated with these multiple samples. For example, Section 6.5.3.2 should list control limits (in terms of relative percent difference or relative standard deviation) that will be used to identify spurious results. Section 6.5.3.2 should also be expanded to describe QA requirements for radon measurements made with the alpha scintillation monitors.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 6.5.4 Page #: 6-31 Line #: 8 and 9
Original Specific Comment #: NA
Comment: The text states that the direct radiation monitoring network will include 30 thermoluminescent dosimeter (TLD) locations, while Section 6.4.2.3 and Figure 6-4 indicate that the network will include 36 TLD locations. Section 6.5.4 should be revised to indicate the correct number of locations. In addition, the text stating that three TLDs are deployed quarterly should be revised to state that three TLDs are deployed quarterly at each location.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 6.5.4.2 Page #: 6-32 Line #: NA
Original Specific Comment #: NA
Comment: Section 6.4.2.3 states that three TLDs will be used at each direct radiation monitoring location, and that the results of these multiple samples will be used to assess the precision of the monitoring data and identify any spurious results. Section 6.5.4.2 should be expanded to further describe the QA requirements associated with these multiple samples. For example, Section 6.5.4.2 should list control limits (in terms of relative standard deviation) that will be used to identify spurious results. In addition, Section 6.5.4.2 mentions intralaboratory comparisons for TLDs but

does not provide any details of how these comparisons will be made. The text should be revised to more clearly describe the intralaboratory comparisons of TLD results.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 6.6 Page #: 6-37 Line #: 7 and 8
Original Specific Comment #: 45
Comment: The text in DOE's response indicates that monthly reporting of radon data from the K-65 silos will be added to Figure 6-5 (now Figure 6-8). The figure contains a footnote reference to quarterly data reporting. In addtion, Figure 8-1 indicates monthly radon reporting that will transition to quarterly reporting during the active period of the IEMP. DOE should clarify its intent on reporting radon data to U.S. EPA and make that intent clear in the IEMP.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 6.6.2 Page #: 6-38 Line #: 12 and 13
Original Specific Comment #: NA
Comment: The text states that basic statistics for alpha scintillation monitors will be generated on a monthly basis. This statement apparently contradicts Section 6.4.2.2 (see lines 19 and 20 on Page 6-20), which states that data from these monitors will be compiled into 24-hour averages. The text should be revised to consistently describe data summary procedures for alpha scintillation monitoring results.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 6.6.3 Page #: 6-42 Line #: 11
Original Specific Comment #: NA
Comment: The text refers to IEMP air monitoring program expectations identified in Section 4.4.1. This reference should be corrected to Section 6.4.1.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 6.6.4 Page #: 6-42 Line #: 5 to 10
Original Specific Comment #: NA
Comment: The text does not clearly describe quarterly reporting requirements for the IEMP air monitoring program; it also does not reflect DOE's commitment in Response #1 to provide quarterly summaries of all air monitoring data to the agencies. Specifically, the text does not clearly state that the quarterly reports will include (1) target radionuclide results from analyses of quarterly composite filter samples and (2) quarterly TLD results from the direct radiation monitoring component of the program. Furthermore, the quarterly reports shown on Figure 6-8 appear to include only radon data (based on footnote *d* to the figure). The text and figure should be revised to clarify that quarterly reports will include data from all three components of the

IEMP air monitoring program (that is, radiological particulate air monitoring, radon monitoring, and direct radiation monitoring).

Commenting Organization: U.S. EPA Commentor: Saric
Section #: C.2.3.1 Page #: C-15 Line #: 24 to 26
Original Specific Comment #: NA
Comment: The text proposes using historical background concentrations to correct measured radionuclide air concentrations when measured background results are below detection limits. Background radionuclide concentrations are likely to vary and will exceed the average historical level in some years and will be below the average historical level in other years. The proposal to use an average historical level in place of low (nondetected) measured background levels--but not in place of high measured background levels--is arbitrary, and radionuclide concentrations corrected by this method will be biased low. The IEMP should be revised to state that measured radionuclide concentrations will be corrected only by background concentrations measured during the same sampling period.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: C.2.3.1 Page #: C-16 Line #: 13
Original Specific Comment #: NA
Comment: The section number for "All Pathway Dose Calculations" should be renumbered as C.2.3.2.